

Amendments to the Specification:

Page 6, amend the paragraph beginning on line 11 to read as follows:

A probe embodiment 1 illustrated in FIG. 1 extracts the signal line 103, and forms the main probe 101, and, as directionality-adjusting devices 102 (102a, 102b), simultaneously forms loop antennas that are inversely wound with respect to the main probe. Moreover, the respective lines are connected to the grounds 104. At this time, an electric-current path 105 of the main probe 101 and electric-current paths 106 (106a, 106b) of the directionality-adjusting devices 102 become opposite in their directions. As a result, even if identical-phase electric currents are fed thereto, electromagnetic fields generated thereby become opposite in their phases. On account of this, the electromagnetic fields generated by the directionality-adjusting devices 102 operate such that these electromagnetic fields cancel out the electromagnetic field generated by the main probe 101. If, for example, the summation of the areas of the directionality-adjusting devices 102 is smaller as compared with the area of the main probe 101, as illustrated in FIG. 8, an in-plane electromagnetic-field intensity distribution 801 finally generated becomes narrower as compared with the electromagnetic-field intensity distribution 701 generated by the conventional-type probe. This indicates that a narrow-directivity probe has been implemented.

Page 7, amend the paragraph beginning on line 8 to read as follows:

Furthermore, in a probe embodiment 2 illustrated in FIG. 3, the directionality-adjusting devices 102 (102a - 102d) are located in a symmetric manner, i.e., located in the axis direction of the main probe 101 and in the direction perpendicular thereto. As illustrated in FIG. 9, this location implements, from the electromagnetic-field intensity distribution generated by the main probe 101, an electromagnetic-field intensity distribution 901 that is narrower than the

electromagnetic-field intensity distribution 801 shown in the probe embodiment 1. This indicates that the probe embodiment 2 has become a narrow-directivity probe.

Page 7, amend the paragraph beginning on line 21 to read as follows:

In this way, when the directionality-adjusting devices 102 are located around the main probe 101, the resultant electromagnetic-field intensity distribution can be focused in comparison with the case of the main probe 101 alone. This means that a narrow-directivity probe has been implemented. FIG. 4 illustrates a conceptual diagram thereof. Here, assuming that the electric-current path 105 of the main probe 101 and the electric-current paths 106 of the directionality-adjusting devices 102 are identical in their directions, the fed electric-current phase difference between the main probe 101 and the directionality-adjusting devices 102 located around the main probe 101 is shifted by  $\pi$  [rad]. This allows the directionality-adjusting devices 102 to cancel out the electromagnetic field generated by the main probe 101, thereby making it possible to narrow the directionality. Meanwhile, as the embodiment illustrated in FIG. 1 or FIG. 3, even if the fed electric-currents are identical in their phases, basically the same result can be acquired as long as the electric-current path 105 of the main probe 101 and the electric-current paths 106 of the directionality-adjusting devices 102 are opposite in their directions. Also, when the electric-current path 105 of the main probe 101 and the electric-current paths 106 (106a, 106b, 106c, 106d) of the directionality-adjusting devices 102 are identical in their directions, the phase difference therebetween need not be completely equal to  $\pi$  [rad], but is allowable as long as the phase difference falls in the range of  $\pi \pm \pi/2$  [rad]. From this condition, when the electric-current path 105 of the main probe 101 and the electric-current paths 106 (106a - 106d) of the directionality-adjusting devices 102 (102a - 102d) are opposite in their directions, the phase difference between the fed electric-currents is allowable up to a phase difference of  $0 \pm \pi/2$  [rad].

Page 10, amend the paragraph beginning on line 7 to read as follows:

Next, referring to FIG. 10 and FIG. 11, the explanation will be given below concerning different embodiments of the configuration mode of the narrow-directivity probe. This configuration is as follows: As illustrated in FIG. 10, in a loop-shaped probe that extracts the signal line 103, and forms the main probe 101, and is connected to the grounds 104, there is provided a method of using conductor plates as the wiring of the grounds 104 to form the conductor plates into directionality-adjusting conductor plates 1001 (1001a, 1001b). Here, it has been known that, if an infinite conductor flat-plate exists for an electric current, a mirror image is configured at a position that is symmetrical to the plane. In this embodiment, the size of these conductor plates is made finite, thereby forming mirror images in an incomplete manner so as to substitute the directionality-adjusting conductor plates 1001 for the directionality-adjusting devices 102 illustrated in FIG. 1. Here, the condition that the conductor plates 1001 are required to satisfy is as follows: The directionality-adjusting conductor plates 1001 are larger than the main probe 101 so that, if the main probe 101 is projected in the axis direction thereof, the entire main probe 101 can be projected on the plates 1001. This is because the plates 1001, although in the incomplete manner, are required to configure the mirror images. Here, in the narrow-directivity probe embodiment 3 (1000) illustrated in FIG. 10, as is the case with the narrow-directivity probe embodiment 1 (100) illustrated in FIG. 1, an in-plane electromagnetic-field intensity distribution generated thereby becomes basically the same as the in-plane electromagnetic-field intensity distribution 801 illustrated in FIG. 8. In view of this situation, as illustrated in FIG. 11, these directionality-adjusting conductor plates 1001 (1001a, 1001b) are connected to each other and directionality-adjusting conductor plates 1101a and 1101b are provided on a probe side, thereby configuring a rectangular-parallelepiped shape. This configuration allows the directionality-adjusting conductor plates 1001 and 1101 to be substituted for the directionality-adjusting devices 102 illustrated in FIG. 3, with 1002:d indicating

a distance between a main probe end and a directionality-adjusting condition plate end. Accordingly, in this narrow-directivity probe embodiment 4 (1100), as is the case with the narrow-directivity probe embodiment 2 (300) illustrated in FIG. 3, an in-plane electromagnetic-field intensity distribution generated thereby becomes basically the same as the in-plane electromagnetic-field intensity distribution 901 illustrated in FIG. 9. In this way, the utilization of the mirror-image effect makes it possible to cause the directionality-adjusting conductor plates 1001 to play a role of the directionality-adjusting devices 102. As the shape of the directionality-adjusting conductor plates 1001 in this case, in addition to the parallel flat-plates shape in FIG. 10 and the rectangular-parallelepiped shape in FIG. 11, various configurations such as a cylindrical shape are available. The condition for permitting the conductor plates 1001 to be substituted for the directionality-adjusting devices 102 is that the conductor plates 1001 have enough areas for permitting the main probe 101 to be projected in at least two directions.